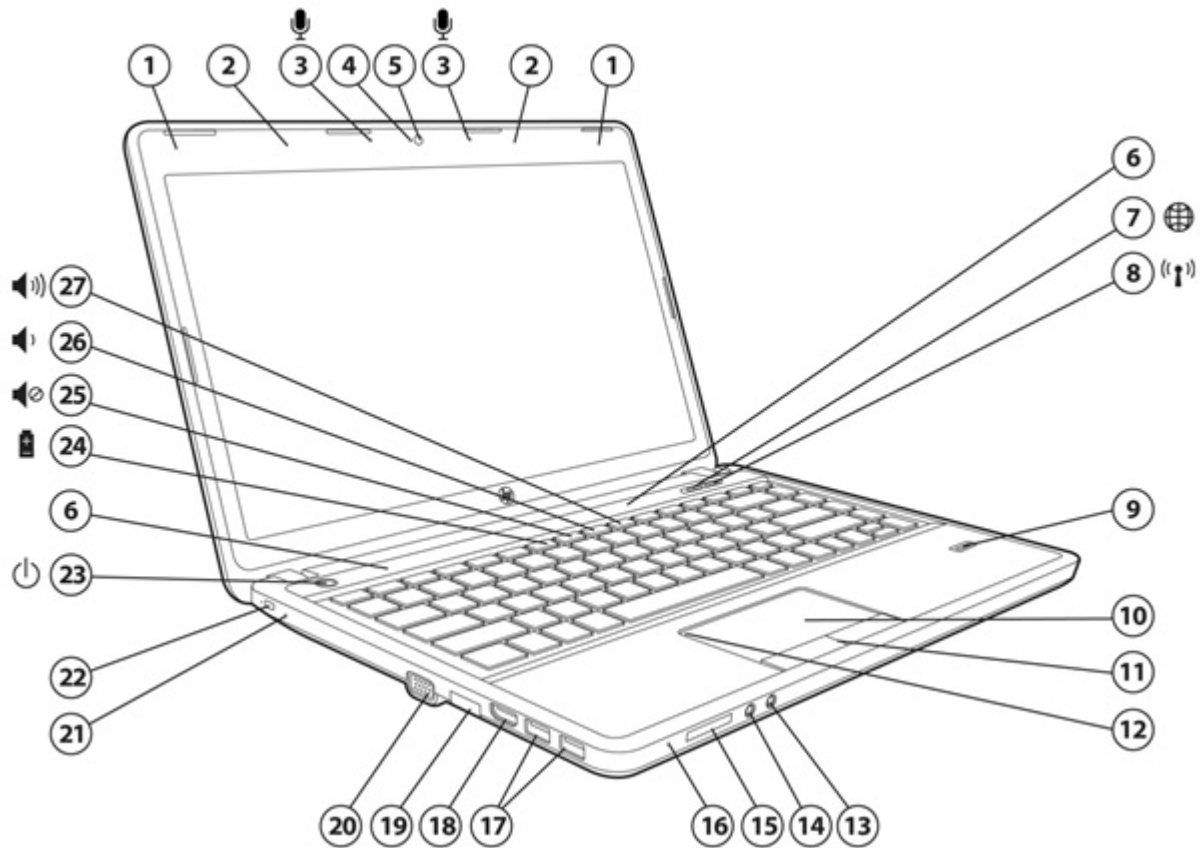


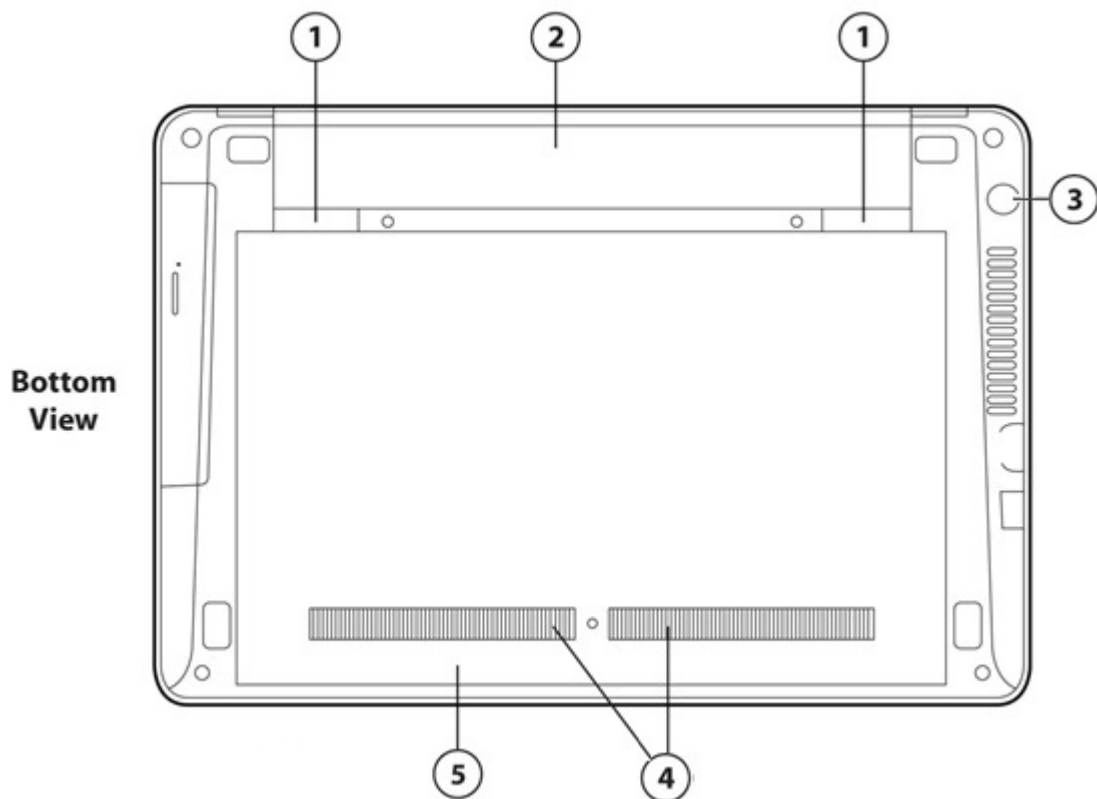
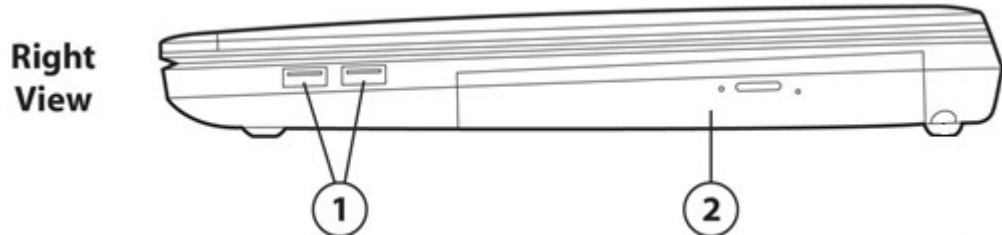
Overview



- | | |
|--|---------------------------------------|
| 1. WWAN antennas (select models) | 15. Media Card Reader |
| 2. WLAN antennas | 16. Hard drive activity LED indicator |
| 3. Dual-microphone array* | 17. (2) USB 3.0 ports |
| 4. Webcam LED indicator (with optional webcam) | 18. HDMI 1.4a port |
| 5. Optional 720p HD webcam | 19. RJ-45/Ethernet port |
| 6. Stereo speakers | 20. VGA/external monitor connector |
| 7. HP WebBrowser button with LED indicator | 21. AC Adapter/battery light |
| 8. Wireless on/off button with LED indicator | 22. Security cable slot |
| 9. Optional HP Fingerprint Sensor | 23. Power button with LED indicator |
| 10. Touchpad | 24. HP Power Assistant function key |
| 11. Touchpad pick buttons | 25. Volume mute function key |
| 12. Touchpad on/off button with LED indicator | 26. Volume down function key |
| 13. Stereo microphone in | 27. Volume up function key |
| 14. Stereo headphone/line out | |

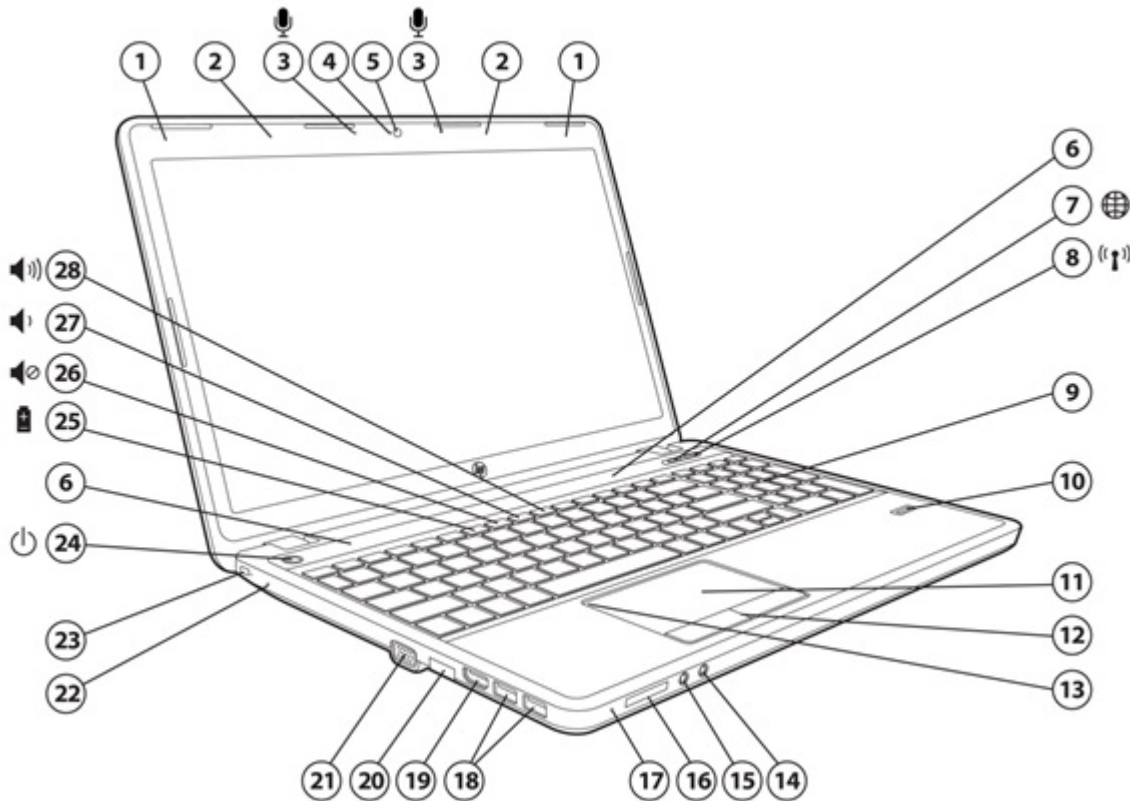
* Models without optional webcam have single integrated microphone.

Overview



HP ProBook 4540s Notebook PC

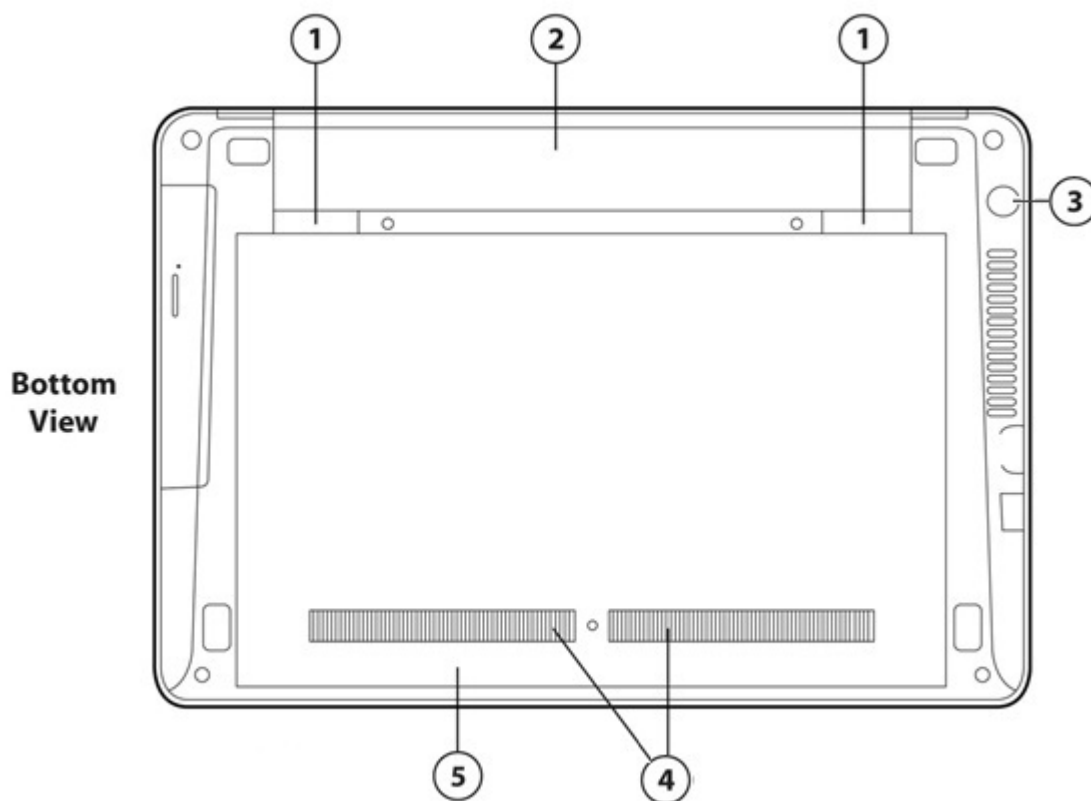
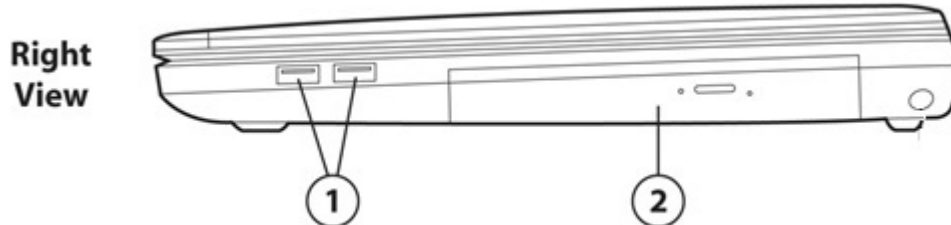
Overview



- | | |
|--|---------------------------------------|
| 1. WWAN antennas (select models) | 15. Stereo headphone/line out |
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| 3. Dual-microphone array* | 17. Hard drive activity LED indicator |
| 4. Webcam LED indicator (with optional webcam) | 18. (2) USB 3.0 ports |
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| 7. HP WebBrowser button with LED indicator | 21. VGA/external monitor connector |
| 8. Wireless on/off button with LED indicator | 22. AC adapter/battery light |
| 9. Numeric keypad | 23. Security cable slot |
| 10. Optional HP Fingerprint Sensor | 24. Power button with LED indicator |
| 11. Touchpad | 25. HP Power Assistant function key |
| 12. Touchpad pick buttons | 26. Volume mute function key |
| 13. Touchpad on/off button with LED indicator | 27. Volume down function key |
| 14. Stereo microphone in | 28. Volume up function key |

* Models without optional webcam have single integrated microphone.

Overview



1. Battery and service door release latches
2. Battery bay
3. Power connector

4. Vents
5. Service door

Overview

At A Glance

- Genuine Windows 7 versions, SUSE Linux, or FreeDOS
- Thin, lightweight design with brushed aluminum finish for durability and style, wear-resistant HP DuraFinish
- Full-sized spill-resistant keyboard; full separate numeric keypad on HP ProBook 4540s
- Larger Touchpad with gestures support, on/off button with LED indicator
- Enhanced security features including HP ProtectTools, HP Face Recognition, optional HP Fingerprint Sensor
- Optional HD webcam with dual-microphone array for video conferencing*
- HDMI port for connecting to high-resolution displays; USB 3.0 ports
- ArcSoft TotalMedia Suite for playing, creating, and editing video and audio files
- SRS Premium Sound optimized for high fidelity audio
- Widescreen LED-backlit HD display with 16:9 aspect ratio
HP ProBook 4440s/1s: 14.0-inch diagonal HD, BrightView optional
HP ProBook 4540s: 15.6-inch diagonal HD
- Choice of 3rd generation Intel® Core™ i7, i5 and i3 processors, 2nd generation Intel Pentium and Intel Celeron processor
- HP WebBrowser button for convenient online access without long boot-up times
- Flexible wireless connectivity options controlled by HP Connection Manager:
 - Integrated HP Mobile Broadband Module*
 - Integrated 802.11 b/g/n wireless LAN module
 - Integrated 802.11 a/b/g/n or b/g/n with Bluetooth 4.0 High Speed (HS) combo card**
- HP Power Assistant to conserve power, increase battery run-time, monitor power needs, report workforce power consumption
- Low Halogen ***, ENERGY STAR qualified and EPEAT Gold registered in the U.S. EPEAT status varies by country- please see epeat.net.

* Available only on HP 4440s/1s/4540s with integrated graphics only.

*** Available on select models.

**** Meeting the industry definition of 'Low Halogen' per the iNEMI Position Statement on "Low Halogen" Electronics. Plastic parts incorporated into the chassis generally contain < 1000 ppm (0.1%) of bromine or chlorine. Printed circuit board and substrate laminates generally contain < 1500 ppm (0.15%) of total bromine and chlorine. Service parts after purchase may not be Low Halogen. External accessories, including power supplies, power cords, and peripherals as well as the following customer-configurable internal components: ATT SIM card are not Low Halogen.

Features

OPERATING SYSTEM

Preinstalled	Genuine Windows 7 Professional 64* Genuine Windows 7 Home Premium 64* Genuine Windows 7 Home Basic 64* SUSE Linux Enterprise Desktop 11 FreeDOS
Supported	Genuine Windows 7 Professional 32 Genuine Windows 7 Home Premium 32 Genuine Windows 7 Home Basic 32
Certified	Microsoft WHQL SUSE Linux

*Not all features are available in all editions of Windows 7. This system may require upgraded and/or separately purchased hardware to take full advantage of Windows 7 functionality. See <http://www.microsoft.com/windows/windows-7/> for details.

PROCESSOR

3rd Generation Intel® Core™ i7-3612QM (2.1 GHz, 6 MB L3 cache, 4 cores)*
Up to 3.10 GHz with Intel Turbo Boost Technology
3rd Generation Intel® Core™ i5-3360M (2.8 GHz, 3 MB L3 cache, 2 cores)*
Up to 3.50 GHz with Intel Turbo Boost Technology
3rd Generation Intel® Core™ i5-3320M (2.6 GHz, 3 MB L3 cache, 2 cores)*
Up to 3.30 GHz with Intel Turbo Boost Technology
3rd Generation Intel® Core™ i5-3210M (2.5 GHz, 3 MB L3 cache, 2 cores)*
Up to 3.10 GHz with Intel Turbo Boost Technology
2nd Generation Intel® Core™ i5-2450M (2.5 GHz, 3 MB L3 cache, 2 cores)*
Up to 3.10 GHz with Intel Turbo Boost Technology
2nd Generation Intel® Core™ i3-2370M (2.4 GHz, 3 MB L3 cache, 2 cores)*
2nd Generation Intel® Celeron™ B840 (1.9 GHz, 2 MB L3 cache, 2 cores)

* Multi-Core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. 64-bit computing on Intel® architecture requires a computer system with a processor, chipset, BIOS, operating system, device drivers, and applications enabled for Intel® 64 architecture. Processors will not operate (including 32-bit operation) without an Intel® 64 architecture-enabled BIOS. Performance will vary depending on your hardware and software configurations. Intel's numbering is not a measurement of higher performance.

NOTE: Processor speed denotes maximum performance mode; processors will run at lower speeds in battery optimization mode.

CHIPSET

Mobile Intel HM76

Features

GRAPHICS

Integrated:

Intel HD Graphics 4000 (3rd Generation Intel Quad-Core i7; Dual-Core i5 and i3)

Intel HD Graphics 3000 (2nd Generation Intel Dual-Core i5 and i3)

Intel HD Graphics (2nd Generation Intel configurations)

Discrete (4540s):

AMD Radeon™ HD 7650M, with 1 GB and 2 GB dedicated DDR3 video memory

DISPLAY

HP ProBook 4440s:

Internal

14" diagonal LED-backlit HD anti-glare (1366 x 768)

External

Up to 32-bit per pixel color depth

VGA

Port supports resolutions up to 2048 x 1536 external resolution @75 Hz

HDMI

Supports direct connection to high-definition displays with up to 1920 x 1200@60Hz resolution and 7-channel audio with one convenient cable (not included)

HP ProBook 4540s:

Internal

15.6" diagonal LED-backlit HD anti-glare (1366 x 768)

External

Up to 32-bit per pixel color depth

VGA

Port supports resolutions up to 2048 x 1536 external resolution @75 Hz

HDMI

Supports direct connection to high-definition displays with up to 1920 x 1200@60Hz resolution and 7-channel audio with one convenient cable (not included)

NOTE: HD content required to view HD images.

NOTE: Resolutions are dependent upon monitor capability, and resolution and color depth settings.

Features

STORAGE AND DRIVES

Primary Storage Bay

Hard Drives

320/500/750 GB 7200 rpm SMART SATA II

320 GB 5400 rpm SMART SATA II (4440s only)

HP 3D DriveGuard (Windows only)

The hard drive is mounted directly to the notebook frame, reducing the transmission of shock to the hard drive

NOTE: For hard drives, GB = 1 billion bytes. Actual formatted capacity is less. Up to 16 GB (for Windows 7) and 36 GB (for Windows 8) of system disk is reserved for the system recovery software.

OPTICAL DRIVES

Fixed 12.7 mm SATA optical drive

Blu-ray ROM DVD+/-RW SuperMulti DL Drive

DVD+/-RW SuperMulti DL Drive

Weight saver

MEMORY

Standard

DDR3 PC3-10600 SDRAM (Up to 1600 MHz on select models)*

Two SODIMM slots supporting dual-channel memory

2 GB and 4 GB SODIMMs

Dual-channel

Maximized dual-channel performance requires SODIMMs of the same size and speed in both memory slots.

NOTE: Due to the non-industry standard nature of some third-party memory modules, we recommend HP branded memory to ensure compatibility. If you mix memory speeds, the system will perform at the lower memory speed. With Windows Starter 32-bit operating systems, the amount of usable memory is dependent upon your configuration, so that above 3 GB all memory may not be available due to system resource requirements.

* Only available when used with 3rd generation processors.

Features

NETWORKING/COMMUNICATIONS

Wireless

Support for a broad range of secure, integrated wireless LAN and wireless WAN options featuring support for the latest industry standards. Broadband Wireless (WWAN) requires a Windows operating system and is available in select countries as a standard, factory configurable feature only. Integrated Bluetooth is also available (factory configurable only) and can be combined with any of the supported wireless LAN and wireless WAN options.

Broadband Wireless (WWAN)

HP hs2350 HSPA+ Mobile Broadband Module (Brazil only for 4440s)

HP un2430 EV-DO/HSDPA/CDMA Mobile Broadband Module (Gobi™ 3000)

Wireless LAN (WLAN)

802.11 b/g/n (1x1)

802.11 b/g/n (1x1) with Bluetooth® v4.0 combo

802.11 a/b/g/n (2x2) with Bluetooth® v4.0 combo

Communications

Realtek 10/100/1000* Ethernet Controller

* The term "10/100/1000" or "Gigabit" Ethernet indicates compatibility with IEEE standard 802.3ab for Gigabit Ethernet, and does not connote actual operating speed of 1 Gb/s. For high-speed transmission, connection to a Gigabit Ethernet server and network infrastructure is required.

AUDIO/MULTIMEDIA

Audio

SRS Premium Sound

Integrated stereo speakers

Integrated microphone (dual-microphone array when equipped with optional webcam)

Function keys for volume mute, volume up, volume down; play, rewind, and fast-forward of video and audio files

Stereo headphone/line out

Stereo microphone/line in

Webcam

Optional 720p HD webcam

- HD format (widescreen)
 - Supports videoconferencing (non-HD) and still image capture
 - High quality fixed focus lens
 - Video capture at various resolutions up to 1280x720 resolution (720p) and up to 30fps
 - M-JPEG compression supports higher frame rates for video capture and videoconferencing
 - Improved low light sensitivity
 - Improved dynamic range
-

Features

KEYBOARDS/POINTING DEVICES/BUTTONS & FUNCTION KEYS

Keyboard

The HP spill-resistant keyboard is designed using a thin layer of Mylar film under the keyboard. The 101/102-key compatible keyboard features a full-pitch key layout with desktop keyboard features, such as editing keys, both left and right control and alt keys, and function keys. US and International key layouts are available. The HP ProBook 4540s include a separate numeric keypad.

Pointing Devices

Touchpad with gestures support, on/off button with LED indicator, two-way scroll, two pick buttons

Buttons and Function Keys

Separate launch buttons provide easy access to wireless on/off and HP WebBrowser. Function keys provide control of features including: standby mode, display brightness, external display, HP Power Assistant, volume mute, volume down, volume up, and media control.

SOFTWARE AND SECURITY

Preinstalled Software with Windows Operating System

HP Recovery Manager
HP Support Assistant
HP Hotkey Support Software
HP Power Assistant
HP Connection Manager
HP Wireless Assistant
ArcSoft Total Media Suite
Buy Office
WinZip

NOTE: HP Recovery Manager enables fast recovery of the factory preinstalled image if the system becomes corrupted or if important system files are accidentally deleted. Up to 19 GB of the hard drive is reserved for the system recovery software. Support in Windows Operating System only.

Security

Standard

HP ProtectTools
Drive Encryption for HP ProtectTools
Credential Manager for HP ProtectTools
HP ProtectTools Security Manager
HP Spare Key
File Sanitizer for HP ProtectTools
Enhanced Pre-Boot Security
HP Face Recognition
HP Disk Sanitizer
Security Lock slot

Configurable

HP Fingerprint reader

Optional

Security Lock
Intel AT (requires a Computrace subscription)*
Microsoft Security Essentials

Features

NOTE: The Computrace agent is shipped turned off, and must be activated by customers when they purchase a subscription. Subscriptions can be purchased for terms ranging multiple years. Service is limited, check with Absolute for availability outside the U.S.

* Intel AT security requires a separately purchased Absolute Computrace service subscription and must be activated and configured. Check with Absolute for availability in your country. Intel and HP assume no liability for lost or stolen data and/or systems or any other damages resulting therefrom. See <http://www.intel.com/technology/anti-theft/>.

For more information on HP security solutions refer to: <http://www.hp.com/go/security>.

POWER

Power Supply

Models with discrete graphics:

External 90W HP Smart AC Adapter

Models with integrated graphics:

External 65W HP Smart AC Adapter

Power cord included is 6-foot (1.8 meter).

Total length including external AC adapter is 12 feet (3.66 meter).

HP Fast Charge

Primary Battery

HP 9-cell Lithium-Ion Battery (93 WHr)

HP 6-cell Lithium-Ion Battery (47 WHr)

Battery Life*

	Configurations with integrated graphics	Configurations with discrete graphics (1 GB)
HP ProBook 4440s		
9-cell (93 WHr) battery	Up to 14 hours 30 minutes	N/A
6-cell (47 WHr) battery	Up to 7 hours 30 minutes	N/A
HP ProBook 4540s		
9-cell (93 WHr) battery	Up to 13 hours 45 minutes	Up to 13 hours 45 minutes
6-cell (47 WHr) battery	Up to 7 hours	Up to 7 hours

System Standby Time

Up to 1 week

*Battery life will vary depending on the product model, configuration, loaded applications, features, use, wireless functionality and power management settings. The maximum capacity of the battery will naturally decrease with time and usage. See MobileMark07 battery benchmark <http://www.bapco.com/products/mobilemark2007> for additional details.

** Configurations with integrated graphics.

NOTE: Fast Charge recharges your battery up to 90% within 90 minutes when the system is off. Please note that 9-cell batteries do not support Fast Charge.

Power Conservation

Supports enhanced Intel SpeedStep technology (allows Battery Optimized Mode, Maximum Performance Mode, or Automatic mode)

Features

AMD PowerPlay technology (discrete models)
Hibernation
Standby
ACPI compliance

ENVIRONMENTAL

ENERGY STAR
IT ECO Declaration
EPEAT Gold where HP registers commercial notebook products. See <http://www.epeat.net> for registration status in your country.

NOTE: This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks.

WEIGHTS & DIMENSIONS

4440s

Weight

Starting at 4.85 lb (2.20 kg) with optical drive
HP 4440/1s: Starting at 4.55 lb (2.07 kg) without optical drive (weight will vary by configuration)

Dimensions (w x d x h)

13.35 x 9.27 x 1.10 in
33.9 x 23.5 x 2.8 cm (at front)

4540s

Weight

Starting at 5.45 lb (2.47 kg) with optical drive
HP 4540s: Starting at 5.14 lb (2.33 kg) without optical drive (weight will vary by configuration)

Dimensions (w x d x h)

14.76 x 10.09 x 1.13 in
37.5 x 25.6 x 2.8 cm (at front)

NOTE: Height varies depending upon where on the notebook the measurement is made. Weight varies by configuration and components. Weight includes 6-cell battery, hard drive, 1 GB memory, and no optical drive. Weight varies by configuration and components.

Features

PORTS/SLOTS

Ports

VGA – One
USB 3.0 – Two
USB 2.0 – Two
HDMI 1.4a – One
Stereo microphone input – One
Headphone/line out – One
RJ-45 (Ethernet) – One
Power connector – One

Digital Media Slots

1 Multi-media Reader Slot supporting SD, SDHC, SDXC, Memory Stick

SERVICE AND SUPPORT

HP Services offers limited 3-year, 1-year and 90-day warranty options depending on country; 1-year limited warranty on primary battery. On-site service and warranty upgrades are also available. HP Care Pack Services extend service contracts beyond the standard warranties. To choose the right level of service for your HP product, use the HP Care Pack Services Lookup Tool at: <http://www.hp.com/go/lookuptool>. Additional HP Care Pack Services information by product is available at: <http://www.hp.com/services/carepack>.

NOTE: Certain restrictions and exclusions apply. Consult the HP Customer Support Center for details.
<http://h20000.www2.hp.com/bizsupport/TechSupport/ProductRoot.jsp>

Technical Specifications

SYSTEM UNIT

Stand-Alone Power Requirements (AC Power)	Nominal Operating Voltage	19 V
	Average Operating Power	Integrated graphics: TBD W Discrete graphics: TBD W
	Max Operating Power	< 65 W or < 90 W
Temperature	Operating	32° to 95° F (0° to 35° C) (not writing optical) 41° to 95° F (5° to 35° C) (writing optical)
	Non-operating	-4° to 140° F (-20° to 60° C)
Relative Humidity	Operating	10% to 90%, non-condensing
	Non-operating	5% to 95%, 101.6° F (38.7° C) maximum wet bulb temperature
Shock	Operating	40 G, 2 ms, half-sine
	Non-operating	200 G, 2 ms, half-sine
Random Vibration	Operating	0.75 grms
	Non-operating	1.50 grms
Altitude (unpressurized)	Operating	-50 to 10,000 ft (-15.24 to 3,048 m)
	Non-operating	-50 to 40,000 ft (-15.24 to 12,192 m)
Planned Industry Standard Certifications	UL	Yes
	CSA	Yes
	FCC Compliance	Yes
	ENERGY STAR®	Select models*
	EPEAT	Registered Gold in United States**
	ICES	Yes
	Australia / NZ A-Tick Compliance	Yes
	CCC	Yes
	Japan VCCI Compliance	Yes
	KC	Yes
	BSMI	Yes
	CE Marking Compliance	Yes
	BNCI or BELUS	Yes
	CIT	Yes
	GOST	Yes
	Saudi Arabian Compliance (ICCP)	Yes
	SABS	Yes
	UKRSERTCOMPUTER	Yes

Technical Specifications

* Configurations of the HP ProBook 4440s and HP ProBook 4540s that are ENERGY STAR qualified are identified as HP ProBook 4440sENERGY STAR and HP ProBook 4540s ENERGY STAR on HP websites and on www.energystar.gov.

** EPEAT registration varies by country. See www.epeat.net for registration status by country. EPEAT status listed above applies to U.S.

For accessibility information on HP products, please visit: <http://www.hp.com/accessibility>.

DISPLAY

15.6-inch LED HD (1366 x 768) anti-glare	Dimensions (W x H)	13.54 x 7.59 in (34.4 x 19.4 cm)	
	Diagonal Size	15.6 in (39.6cm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	400:1 (min)	
	Refresh Rate	60 Hz	
	Brightness	210 nit (typical)	
	Pixel Resolution	Pitch	0.252 mm
		Format	1366 x 768
		Configuration	RGB Stripe
	Backlight	LED	
	PPI	101 ppi	
	Viewing Angle	±30° Horizontal, ±10° Vertical (minimum) 30/30/20/10 (Left/Right/Down/Up) (minimum) or 45/45/35/25 (Left/Right/Down/Up) (typical)	
14.0-inch LED HD (1366 x 768) anti-glare	Dimensions (W x H)	12.74 x 7.56 in (32.4 x 19.2 cm)	
	Diagonal Size	14.0 in (35.6cm)	
	Surface Treatment	Anti-glare	
	Contrast Ratio	400:1 (typical)	
	Refresh Rate	60 Hz	
	Brightness	200 nit (typical)	
	Pixel Resolution	Pitch	0.227 mm
		Format	1366 x 768
		Configuration	RGB Stripe
	Backlight	LED	
	PPI	112 ppi	
	Viewing Angle	±30° Horizontal, ±10° Vertical (minimum) 30/30/20/10 (Left/Right/Down/Up) (minimum) or 45/45/35/25 (Left/Right/Down/Up) (typical)	

Technical Specifications

STORAGE AND DRIVES

Internal Storage

750 GB 7200 rpm SATA Hard Drive

Drive Weight	0.25 lbs (115g)
Capacity	750 GB
Height	0.37 in (9.5 mm)
Width	2.75 in (70 mm)
Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
Transfer Rate	Synchronous (maximum) 300 MB/s (Drive Capability)
Seek Time (typical reads, including settling)	Single Track 1.5 ms
	Average 11 ms
	Maximum 22 ms
Rotational Speed	7200 rpm
Logical Blocks	1,465,149,168
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
Features	ATA Security

500 GB 7200 rpm SATA Hard Drive

Drive Weight	0.25 lbs (115g)
Capacity	500 GB
Height	0.37 in (9.5 mm)
Width	2.75 in (70 mm)
Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
Transfer Rate	Synchronous (maximum) 300 MB/s (Drive Capability)
Seek Time (typical reads, including settling)	Single Track 1.5 ms
	Average 11 ms
	Maximum 22 ms
Rotational Speed	7200 rpm
Logical Blocks	976,773,168
Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
Features	ATA Security

Technical Specifications

320 GB 7200 rpm SATA Hard Drive	Drive Weight	0.25 lbs (115 g)
	Capacity	320 GB
	Height	0.37 in (9.5 mm)
	Width	2.75 in (70 mm)
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
	Transfer Rate	Synchronous (maximum) 300 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track 1.5 ms
		Average 11 ms
		Maximum 22 ms
	Rotational Speed	7200 rpm
	Logical Blocks	625,142,448
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
	Features	ATA Security

320 GB 5400 rpm SATA Hard Drive	Drive Weight	0.22 lb (101 g)
	Capacity	320 GB
	Height	0.37 in (9.5 mm)
	Width	2.75 in (70 mm)
	Interface	ATA-8, SATA 2.6, 3.0 Gb/s, NCQ
	Transfer Rate	Synchronous (maximum) 300 MB/s (Drive Capability)
	Seek Time (typical reads, including settling)	Single Track 3 ms
		Average 13 ms
		Maximum 24 ms
	Rotational Speed	5400 rpm
	Logical Blocks	625,142,448
	Operating Temperature	32° to 140° F (0° to 60° C) [case temp]
	Features	ATA Security

Optical Drives

Technical Specifications

DVD+/-RW SuperMulti DL Drive	Access Times	Random	<140ms CD (typical) < 160 ms DVD (typical)
	Max Data Transfer Rate	24X CD-ROM 8X DVD 24X CD-R 24X CD-RW 8X DVD+R 8X DVD+RW 8X DVD-R 6X DVD-RW 6X - DVD+R Dual Layer 6X - DVD-R Dual Layer 5X DVD-RAM	
	Transfer Mode	UDMA Mode 5	
	Interface	Gen 1 SATA	
	Supported Media (read)	CD-DA, CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW, DVD-RAM	
	Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+RW, DVD-R, DVD-RW, DVD-RAM, DVD+R DL, DVD-R DL	
	Max Media Capacity (read)	8.5 GB	
	Max Media Capacity (write)	8.5 GB	
	Transport	Tray Loading	
Blu-ray ROM DVD+/-RW SuperMulti DL Drive	Access Times	Random	<190 ms CD-ROM (typical) < 180ms DVD-ROM (typical) <230 ms BD-ROM (typical)
	Max Data Transfer Rate	24X CD-ROM 8X DVD-ROM 24X CD-R 16X CD-RW 8X DVD+R 8X DVD+RW 8X DVD-R 6X DVD-RW 4X - DVD+R Dual Layer 4X - DVD-R Dual Layer 5X DVD-RAM 6X BD-ROM	

Technical Specifications

Transfer Mode	UDMA Mode 5
Interface	Gen 1 SATA
Supported Media (read)	CD-DA, , CD-TEXT, CD-ROM, CD-ROM XA, MIXED MODE CD, CD-I, CD-I Bridge (Photo-CD, Video CD), Multisession CD (Photo-CD, CD-EXTRA, Portfolio, CD-R, CD-RW), CD-R, CD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18), DVD-R, DVD-RW, DVD+R, DVD+RW. DVD-RAM, BD-ROM, BD-R, BD-RE
Supported Media (write)	CD-R, CD-RW, DVD+R, DVD+R DL, DVD+RW, DVD-R, DVD-R DL, DVD-RW, DVD-RAM
Max Media Capacity (read)	50.0 GB
Max Media Capacity (write)	8.5GB
Transport	Tray Loading

SECURITY

HP Fingerprint Sensor	Mobile Voltage Operation	3.0V-3.6V Single Supply
	Operating Temperature	32° - 158°F (0° - 70°C)
	Current Consumption @ 3.3V	Less than 70 mA peak imaging and scrolling Less than 25 mA hardware finger detection Advanced Power Management
	High-Rate Image Capture	Up to 240 image frames /sec
	ESD Resistance	IEC 61000-4-2 Level 4 (±15KV)
	Detection Matrix	192 x 16 Pixels 9.7 mm x 0.81 mm 500 ppi High-Resolution Images

NETWORKING/COMMUNICATIONS

Technical Specifications

Integrated Realtek RTL8151FH-CG 10/100/1000 NIC	Ethernet Features	10 Mbit/s operation (10BASE-T; IEEE 802.3i; IEEE 802.3 clauses 13-14) 100 Mbit/s operation (100BASE-TX; IEEE 802.3u; IEEE 802.3 clauses 21-30) 1000 Mbit/s operation (1000BASE-T; IEEE 802.3ab; IEEE 8023 clauses 40) Auto-Negotiation (Automatic Speed Selection) Full Duplex Operation at all Speeds, Half Duplex operation at 10 and 100 Mbit/s IEEE 802.1p QoS (Quality of Service) Support IEEE 802.1q VLAN support IEEE 802.3x Flow Control (IEEE 802.3 clauses 31-32; configurable) IEEE 802.3az EEE (Energy Efficient Ethernet) Jumbo Frame 9K Auto MDI/MDIX Crossover cable detection
	Power Management Support	ACPI compliant - multiple power modes Situation-sensitive features reduce power consumption Advanced link down power saving for reducing link down power consumption
	Performance Features	TCP/IP/UDP Checksum Offload (configurable) Protocol Offload (ARP & NS) Large send offload and Giant send offload Receiving Side Scaling
	Manageability	Wake-on-LAN from standby and hibernation (Magic Packet and Microsoft Wake-Up Frame); Wake-on-LAN from off (Magic Packet only) PXE 2.1 Remote Boot Statistics Gathering (SNMP MIB II, Ethernet-like MIB, Ethernet MIB (802.3x, clause 30)) Comprehensive diagnostic and configuration software suite Virtual Cable Doctor for Ethernet cable status
	Interface NIC Device Driver Name	PCI Express 1.1 x1 to fully support ASPM L0s/L1 and CLKREQ Realtek PCIe GBE Ethernet Family Controller

HP un2430 EV-DO/HSDPA / CDMA Mobile Broadband Module (Gobi™ 3000)	Technology/Operating Bands	GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM), 1800MHz(DCS), 1900MHz (PCS) UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I), 1900MHz (UTRA FDD Band II), AWS (UTRA FDD Band IV), 900MHz(UTRA FDD Band VIII), 850MHz (UTRA FDD Band V) 1xEVDO/1xRTT with receive diversity: 850MHz (Band Class0-Cell), 1900MHz (Band Class1-PCS)
	Wireless Protocol Standards	GSM/GPRS/EDGE: Class A, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9. UMTS/WCDMA: Release 99 and Release 6 CDMA: 1xEVDO Release 0 and Release A, IS-95A, IS-95B, IS-856, IS-2000
	Wireless Parametric Standards	Meets or exceeds TIA/EIA IS-98-D
	Maximum Data Rates	UMTS (HSPA) - 14.4 Mbps (Download), 5.76Mbps (Upload) CDMA (EVDO Release A) - 3.1 Mbps (Download), 1.8Mbps (Upload)
	GPS	Standalone GPS enabled gpsOneXTRATM™
	GPS Bands	L1 - 1575.42 MHz

Technical Specifications

Maximum Output Power	GSM/GPRS/EDGE: 32dBm (+/-1) WCDMA: 24dBm (+0.7/-2.3) CDMA: 24dBm (+0.7/-2)
Maximum Power Consumption	2750mA (peak); 1100mA (average)
Power Consumption, Idle Not Connected	20 mA
Power Management	USB selective suspend Integrated notebook wireless button
Antenna Type	Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure
Form Factor	PCI-Express MiniCard, USB 2.0 interface
Weight	11.5 g
Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm)
Voltage, Operating	3.3v +/- 10%
Temperature, Operating (from TIA/EIA/IS-98-D)	-22° to 158° F (-30° to 70° C) (full RF performance) -22° to 167° F (-30° to 75° C) (reduced RF performance)
Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-40° to 185° F (-40° to 85° C)
Humidity, Non-operating	95% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
Configuration Utilities	HP Connection Manager
LED Activity	LED Off - Radio Off; Solid LED On - Radio On

HP hs2350 HSPA+ Mobile Broadband Module	Technology/Operating Bands	GSM/GPRS/EDGE: 850MHz(Cell), 900MHz(EGSM), 1800MHz(DCS), 1900MHz (PCS) UMTS/WCDMA with receive diversity: 2100MHz (UTRA FDD Band I), 1900MHz (UTRA FDD Band II), 900MHz(UTRA FDD Band VIII), 850 MHz (UTRA FDD Band V)
	Wireless Protocol Standards	GSM/GPRS/EDGE: Class B, Multi-slot class 10 operation, coding schemes CS1 - CS4 and MSC1 - MSC9. UMTS/WCDMA: Release 99 and Release 7 Advanced Receiver Type 3i
	Wireless Parametric Standards	Complies with 3GPP specifications
	Maximum Data Rates	UMTS (HSPA) - 21 Mbps (Download), 5.76Mbps (Upload)
	GPS	Standalone, A-GPS (Internet- and Network assisted)
	GPS Bands	1575.42 MHz (± 1.023 MHz)
	Maximum Output Power	GSM/EDGE GSM850 & GSM900 bands GPRS: +33 dBm ± 2 dBm (class 4) EGPRS: +27 dBm ± 3 dBm (class E2)

Technical Specifications

	DCS1800 & PCS1900 bands GPRS: +30 dBm \pm 2 dBm (class 1) EGPRS: +26 dBm +4 / -3 dBm (class E2)
	UMTS UTRA FDD Bands +24 dBm +4 / -3 dBm (class 3)
Maximum Power Consumption	2000mA (peak); 600mA (average)
Power Consumption, Sleep Mode	5 mA
Power Management	USB selective suspend Integrated notebook wireless button
Antenna Type	Dual high efficiency 5 band antennae with spatial diversity, mounted in the display enclosure
Form Factor	PCI-Express MiniCard, USB 2.0 interface
Weight	< 12 g
Dimensions (Length x Width x Thickness)	2.01 x 1.18 x 0.18 in (51 x 30 x 5 mm)
Voltage, Operating	3.3v +/- 9%
Temperature, Operating	14° to 149° F (-10° to 65° C) (full RF performance) 14° to 167° F (-10° to 75° C) (reduced RF performance)
Temperature, Non-operating, 96 hours (from MIL-STD 202 Method 108)	-22° to 185° F (-30° to 85° C)
Humidity, Non-operating	85% relative humidity for 48 hours @ 185° F (85° C) (non-condensing)
Configuration Utilities	HP Connection Manager
LED Activity	LED Off - Radio Off; Solid LED On - Radio On

Intel Centrino Advanced - N 6235 802.11a/g/n (2x2) Bluetooth v4.0 combo	Wireless LAN Standards	IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11n
	Interoperability	Wi-Fi certified Cisco Compatible Extensions Program compliant with Microsoft Windows 7, Windows Vista and XP (details at: http://www.hp.com/go/notebooks/WLAN)
	Frequency Band	2.4 GHz and 5 GHz
	Data Rates	802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: 66 possible data rates, ranging from 6 Mbps to 300 Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n specification

Technical Specifications

Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM
Security¹	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST. Support for Cisco Security Features (proven compatibility with Cisco Aironet infrastructure products through the Cisco Compatible Extensions Program Version 5) with Microsoft Windows 7, Windows Vista and XP only.
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)
Roaming	IEEE 802.11 compliant roaming between access points
Output Power²	13.5 dBm , nominal
Power Consumption	Idle associated: 250 mW Idle unassociated: 100 mW Radio disabled: 75mW Transmit: 2.0 W (max) Receive: 1.6 W (max)
Power Management	ACPI compliant power management 802.11 compliant power saving mode
Receiver Sensitivity³	54 Mbps: -71 dBm, 11 Mbps: -85 dBm , 1 Mbps: -95 dBm
Antenna Connections	High efficiency dual band antenna with spatial diversity, mounted in the display enclosure
Form Factor	PCI-Express Half-MiniCard 1.2
Weight	0.013 lb (6 g)
Dimensions	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)
Operating Voltage	3.3v +/- 10%
Temperature	Operating 14° to 158° F (-10° to 70° C) Non-operating -40° to 176° F (-40° to 80° C)
Humidity	Operating 10% to 90% (non-condensing) Non-operating 5% to 95% (non-condensing)
Altitude	Operating 0 to 10,000 ft (3,048 m) Non-operating 0 to 50,000 ft (15,240 m)
Configuration Utility⁴	Microsoft Windows XP Choice of Configuration Utility: <ul style="list-style-type: none"> • Microsoft Windows XP Wireless Network Connection Manager • Broadcom Wireless Configuration Utility (required for Cisco Compatible Extensions support) Microsoft Windows Vista <ul style="list-style-type: none"> • Microsoft Windows Vista Wireless Network Connection Manager

Technical Specifications

- Broadcom IHV extensions for Windows Vista available to support Cisco Compatible Extensions.

Microsoft Windows 7

- Microsoft Windows 7 Wireless Network Connection Manager
- Broadcom IHV extensions for Windows 7 available to support Cisco Compatible Extensions.

LED Activity

LED Off - Radio OFF; Solid LED On - Radio ON

1. Check latest software/driver release for updates on supported security features.
2. Maximum output power may vary by country according to local regulations.
3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CCK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).
4. WLAN supplier's client utility is required for Cisco Compatible Extensions support with Microsoft Windows XP. WLAN may also be compatible with certain third-party software supplicants. WLAN supplier IHV extensions required for Cisco Compatible Extensions support for Microsoft Windows Vista.

Bluetooth 4.0 Wireless Technology

Bluetooth Specification	2.1+EDR, 3.0+HS, 4.0 Compliant
Dimensions	1.18 x 0.26 x 0.13 in (30 x 6.5 x 3.25 mm)
Frequency Band	2402 to 2480 MHz
Number of Available Channels	79 (1 MHz) available channels
Data Rates and Throughput	3 Mbps data rate; throughput up to 2.17 Mbps Synchronous Connection Oriented links up to 3, 64 kbps, voice channels Asynchronous Connection Less links 2178.1 kbps/177.1 kbps asymmetric or 1306.9 kbps symmetric
Transmit Power	Max 4 dBm (Bluetooth Class II)
Receiver Sensitivity	Better than -80 dBm at 0.1 % raw bit error rate
Power Consumption	Average 230mW Sleep <1 mW
Antenna	Internally integrated within module
Range	Up 33 ft (10 m)
Electrical Interface	USB 2.0 compliant Microsoft Windows Plug and Play compliant
Bluetooth Software Supported	Broadcom Bluetooth for Windows Microsoft Windows Bluetooth Software
Link Topology	Point to Point, Multipoint Pico Nets up to 7 slaves
Security	Full support of Bluetooth Security Provisions
Power Management	Microsoft Windows ACPI, and USB Bus Support Self configurable to optimize power conservation in all operating modes, including Standby, Hold, Park, and Sniff

Technical Specifications

Certifications	All necessary regulatory approvals for supported countries, including: FCC (47 CFR) Part 15C, Section 15.247 & 15.249 ETS 300 328, ETS 300 826 Low Voltage Directive IEC950 UL, CSA, and CE Mark	
Temperature	Operating	-4° to 158° F (-20° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90%
	Non-operating	5% to 95%
Altitude	Operating	15,000 ft (4,572 m)
	Non-operating	40,000 ft (12,192 m)
Bluetooth Profiles Supported	Serial Port Profile (SPP) ¹ Service Discovery Application Profile (SDAP) Dial-Up Networking (DUN) ^{1,2} Generic Object Exchange Profile (GOEP) ^{1,2} Object Push Profile (OPP) ^{1,2} File Transfer Profile (FTP) Synchronization Profile (SYNC) Hard Copy Cable Replacement (HCRP) ^{1,2} Personal Area Networking Profile (PAN) ^{1,2} Human Interface Device Profile (HID) ^{1,2,3} FAX Profile (FAX) Basic Imaging Profile (BIP) ² Headset Profile (HSP) Hands Free Profile (HFP) Advanced Audio Distribution Profile (A2DP)	

1. indicates the profile is supported by Microsoft Windows XP SP2

2. indicates the profile is part of Windows Vista

802.11 b/g/n WiFi Adapter Wireless LAN Standards (1x1)

	IEEE 802.11b IEEE 802.11g IEEE 802.11n
Interoperability	Wi-Fi certified
Frequency Band	2.4 GHz
Data Rates	802.11b: 1, 2, 5.5, 11 Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11n: many possible data rates, ranging from 6 Mbps to 300 Mbps, depending on the combination of Bandwidth, Modulation Coding Scheme, and Guard Interval used, as defined in IEEE 802.11n specification
Modulation	Direct Sequence Spread Spectrum DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16-QAM, 64-QAM

Technical Specifications

Security¹	Supports 64- and 128-bit WEP, WPA, WPA2, hardware-accelerated AES, 802.1x authentication types EAP-TLS, EAP-TTLS, PEAP-GTC, PEAP-MSCHAPv2, LEAP, EAP-FAST.	
Sub-channels	Multinational support with frequency bands and channels compliant to local regulations.	
Media Access Protocol	CSMA/CA (Collision Avoidance) with ACK	
Network Architecture Models	Ad-hoc (Peer to Peer) Infrastructure (Access Point Required)	
Roaming	IEEE 802.11 compliant roaming between access points	
Output²	13.5 dBm, nominal	
Power Consumption	Transmit: 2.0 W (max) Receive: 1.6 W (max) Associated to Access Point, Idle: 250 mW nominal Wireless Button Off: 100 mW nominal Radio disabled: 75 mW nominal	
Power Management	ACPI compliant power management 802.11 compliant power saving mode	
Receiver Sensitivity³	72.2 Mbps: -70 dbm, 54 Mbps: -74 dBm, 11 Mbps: -88 dBm , 1 Mbps: -95 dBm	
Antenna Connections	High efficiency antenna with spatial diversity, mounted in the display enclosure	
Form Factor	PCI-Express Half-MiniCard 1.2	
Weight	0.013 lb (6 g)	
Dimensions	0.19 x 1.06 x 1.18 in (4.75 x 26.8 x 30 mm)	
Operating Voltage	3.3v +/- 9%	
Temperature	Operating	14° to 158° F (-10° to 70° C)
	Non-operating	-40° to 176° F (-40° to 80° C)
Humidity	Operating	10% to 90% (non-condensing)
	Non-operating	5% to 95% (non-condensing)
Altitude	Operating	0 to 10,000 ft (3,048 m)
	Non-operating	0 to 50,000 ft (15,240 m)
LED Activity	LED Off - Radio OFF; Solid LED On - Radio ON	

1. Check latest software/driver release for updates on supported security features.

2. Maximum output power may vary by country according to local regulations.

3. Receiver sensitivity is measured at a packet error rate of 8% for 802.11b (CKK modulation) and a packet error rate of 10% for 802.11a/g (OFDM modulation).

AUDIO/MULTIMEDIA

Technical Specifications

Hardware	Implementation	IDT 92HD87 High Definition CODEC
	Function Key Volume Controls	Volume up, volume down, and mute
	Full Duplex	Yes
	Microphone In	Stereo
	Headphone/Line Out	Stereo
	Integrated Microphone	Yes, dual digital microphone array when equipped with optional webcam

Audio Output Quality	Frequency Response	20 Hz - 20 kHz
	Signal to Noise Ratio	>85 dB
	Total Harmonic Distortion	0.01%
	Noise Floor	-110 dB
	Play/Record Sampling Rate(s)	8 kHz - 48kHz
	DAC	16, 20 or 24-bit
	ADC	16 or 20-bit

Internal Stereo Speaker	Power Rating	2 Watts
	Impedance	4 ohms

POWER

HP 90W Smart AC Adapter (discrete configurations) - 4540s only	Dimensions	5.00 x 1.97 x 1.1 in (12.7 x 5.0 x 2.9 cm)	
	Weight	0.82 lb (370 g)	
	Input	Input	100 to 240 VAC
		Input Efficiency	87% min at 115 VAC
		Input frequency range	47 to 63 Hz
		Input AC current	1.5 A at 90 VAC, 0.75 A at 180 VAC PFC Version 2.4 A at 90 VAC, 1.2 A at 180 VAC NON PFC Version
	Output	Output power	90W
		DC output	19.0V
		Hold-up time	5 msec at 115 VAC input
		Output current limit	<11A, Over voltage protection- 29V max automatic shutdown
	Connector	3 pin/grounded, mates with interchangeable cords	
	Environmental Design	Operating temperature	32° to 104° F (0° to 40° C)

Technical Specifications

EMI and Safety Certifications	Non-operating (storage) temperature	-4° to 149° F (-20° to 65° C)
	Altitude	0 to 10,000 ft (0 to 3,048 m)
	Humidity	20% to 80%
	Storage Humidity	10% to 90%
	CE Mark - full compliance with LVD and EMC directives; Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; MTBF- over 200,000 hours at 25°C ambient condition.	

HP 65W Smart AC Adapter (Configurations with integrated graphics)	Dimensions	4.17 x 1.85 x 1.1 in (10.6 x 4.7 x 2.8 cm)
	Weight	0.62 lb (280 g)
	Input	100 to 240 VAC
		Input Efficiency 87% min at 115 VAC
		Input frequency range 47 to 63 Hz
	Output	Input AC current 1.7 A at 90 VAC, 0.85 A at 180 VAC
		Output power 65W
		DC output 18.5V
		Hold-up time 5 msec at 115 VAC input
		Output current limit <11A, Over voltage protection- 29V max automatic shutdown
	Connector	3 pin/grounded, mates with interchangeable cords
	Environmental Design	Operating temperature 32° to 104° F (0° to 40° C)
		Non-operating (storage) temperature -4° to 149° F (-20° to 65° C)
		Altitude 0 to 10,000 ft (0 to 3,048 m)
		Humidity 20% to 80%
		Storage Humidity 10% to 90%
	EMI and Safety Certifications	CE Mark - full compliance with LVD and EMC directives; Worldwide safety standards - IEC60950, EN60950, UL60950, Class1, SELV; Agency approvals - C-UL-US, NORDICS, DENAN, EN55022 Class B, FCC Class B, CISPR22 Class B, CCC, NOM-1 NYCE; MTBF - over 200,000 hours at 25°C ambient condition.

Technical Specifications

9-Cell (93 WHr) Lithium-Ion battery	Dimensions (H x W x L)	0.8 x 2.9 x 8.3 in (2.0 x 7.3 x 21.0 cm)
	Weight (max)	1.07 lb (0.488 kg)
	Cells/Type	9-cell Lithium-Ion
	Energy	Watt-hour capacity 93 WHr
	Temperature	Operating (Charging) 32° to 113° F (0° to 45° C)
		Operating (Discharging) 14° to 140° F (-10° to 60° C)
		Non-operating -4° to 140° F (-20° to 60° C)
	Battery Re-Charge Time	System in OFF or Standby Mode 3 to 4 hours
		System ON 4 to 6 hours (depending on system power consumption)

6-Cell (47 WHr) Lithium-Ion battery	Dimensions (H x W x L)	0.8 x 1.8 x 10.4 in (2 x 4.5 x 26.5cm)
	Weight (max)	.70lb, (.312kg)
	Cells/Type	Lithium-Ion
	Energy	Voltage 10.8V
		Amp-hour capacity 4.4Ah
		Watt-hour capacity 47Wh
	Temperature	Operating (Charging) 32° to 113° F (0° to 45° C)
		Operating (Discharging) 14° to 122° F (-10° to 50° C)
		Non-operating -4° to 122° F (-20° to 50° C)
	Battery Re-Charge Time	System in OFF or Standby Mode 2.5 hours
		System ON 3 to 5 hours
	Fuel Gauge LED	No
	Warranty	1 year
	Compatible with optional Travel Battery	No

ENVIRONMENTAL

Technical Specifications

HP ProBook 4440s Notebook PC

Environmental Data

Eco-Label Certifications This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

US ENERGY STAR qualified
IT ECO declaration
EPEAT Gold with a Microsoft OS where HP registers commercial notebook products. See <http://www.epeat.net> for registration status in your country.

System Configuration The configuration used for the Energy Consumption and Declared Noise Emissions data is based on a "Typically Configured Notebook"

Energy Consumption	115 VAC	230 VAC	100 VAC
Normal Operation	6.37 W	6.47 W	5.74 W
Sleep (Energy Star low power mode)	0.94 W	1.09 W	0.93 W
Off	0.52 W	0.65 W	0.52 W

Heat Dissipation*	115 VAC	230 VAC	100 VAC
Normal Operation	22 BTU/hr	22 BTU/hr	20 BTU/hr
Sleep	3 BTU/hr	4 BTU/hr	3 BTU/hr
Off	2 BTU/hr	2 BTU/hr	2 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	3.4	28
Fixed Disk (random writes)	3.4	29

System fan is usually off except when charging the battery

Batteries This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight

The battery type and chemistry used in the product is:

CR2032 (coin cell), Li-ion
6-cell high capacity Lithium-Ion battery (optional 8 cell available)

Additional information This product is in compliance with the Restrictions of Hazardous Substances (RoHS) directive - 2002/95/EC.

Technical Specifications

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% post-consumer recycled plastic (by wt.)

This product is greater than 96.3% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
 - PAPER/Cardboard & misc 325 g
 - PAPER/Corrugated 51 g
- Internal:
 - PLASTIC/Polyethylene low density 15 g
 - PLASTIC/EPE-Expanded Polyethylene 68 g
 - PLASTIC/PET 20 g
 - OTHER/OTHER 20 g
- The PAPER/Cardboard & misc is made from 80% recycled content.
- The PAPER/Corrugated is made from 80% recycled content.
- The PLASTIC/Polyethylene low density is made from 65% recycled content
- The PLASTIC/EPE-Expanded Polyethylene is made from 65% recycled content
- The PLASTIC/PET is made from 65% recycled content
- The OTHER/OTHER is made from 65% recycled content

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and corrugated materials.
- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN

Technical Specifications

6120 standards.

HP ProBook 4540s Notebook PC

Environmental Data

Eco-Label Certifications

This product has received or is in the process of being certified to the following approvals and may be labeled with one or more of these marks:

US ENERGY STAR qualified
IT ECO declaration
EPEAT Gold with a Microsoft OS where HP registers commercial notebook products. See <http://www.epeat.net> for registration status in your country.

System Configuration

The configuration used for the Energy Consumption and Declared Noise Emissions data is based on a "Typically Configured Notebook"

Energy Consumption

	115 VAC	230 VAC	100 VAC
Normal Operation	6.16 W	6.50 W	6.14 W
Sleep (Energy Star low power mode)	0.92 W	1.08 W	0.92 W
Off	0.56 W	0.69 W	0.55 W

Heat Dissipation*

	115 VAC	230 VAC	100 VAC
Normal Operation	21.1 BTU/hr	22.2 BTU/hr	20.9 BTU/hr
Sleep	3.1 BTU/hr	3.6 BTU/hr	3.1 BTU/hr
Off	2 BTU/hr	2.3 BTU/hr	1.8 BTU/hr

* Heat dissipation is calculated based on the measured watts, assuming the service level is attained for one hour.

Declared Noise Emissions (in accordance with ISO 7779 and ISO 9296)

System Fan Off	Sound Power (LWAd, bels)	Sound Pressure (LpAm, decibels)
Idle	3.3	30
Fixed Disk (random writes)	3.3	30

System fan is usually off except when charging the battery

Batteries

This battery(s) in this product comply with EU Directive 2006/66/EC

Batteries used in the product do not contain:

- Mercury greater the 5ppm by weight
- Cadmium greater than 10ppm by weight

The battery type and chemistry used in the product is:

CR2032 (coin cell), Li-ion
6-cell high capacity Lithium-Ion battery (optional 8 cell available)

Additional

This product is in compliance with the Restrictions of Hazardous Substances

Technical Specifications

information

(RoHS) directive - 2002/95/EC.

This HP product is designed to comply with the Waste Electrical and Electronic Equipment (WEEE) Directive - 2002/96/EC.

This product is in compliance with California Proposition 65 (State of California; Safe Drinking Water and Toxic Enforcement Act of 1986).

This product is in compliance with the IEEE 1680 (EPEAT) standard at the Gold level, see www.epeat.net

Plastics parts weighing over 25 grams used in the product are marked per ISO 11469 and ISO1043.

This product contains 0% post-consumer recycled plastic (by wt.)

This product is greater than 97.2% recycle-able when properly disposed of at end of life.

Packaging Materials

- External:
 - PAPER/Cardboard & misc 480 g
- Internal:
 - PLASTIC/Polyethylene low density 26 g
 - PLASTIC/PET 3 g
 - PLASTIC/EPE-Expanded Polyethylene 55 g
 - OTHER/OTHER 20 g
- The PAPER/Cardboard & misc packaging material is made from 80% recycled content.
- The PAPER/Corrugated packaging material is made from 80% recycled content.
- The PLASTIC/Polyethylene low density packaging material is made from 65% recycled content
- The PLASTIC/PET packaging material is made from 65% recycled content
- The PLASTIC/EPE-Expanded Polyethylene packaging material is made from 65% recycled content
- The OTHER/OTHER packaging material is made from 65% recycled content

HP follows these guidelines to decrease the environmental impact of product packaging:

- Eliminate the use of heavy metals such as lead, chromium, mercury and cadmium in packaging materials.
- Eliminate the use of ozone-depleting substances (ODS) in packaging materials.
- Design packaging materials for ease of disassembly.
- Maximize the use of post-consumer recycled content materials in packaging materials.
- Use readily recyclable packaging materials such as paper and

Technical Specifications

corrugated materials.

- Reduce size and weight of packages to improve transportation fuel efficiency.
- Plastic packaging materials are marked according to ISO 11469 and DIN 6120 standards.

ALL MODELS

MATERIAL USAGE

This product does not contain any of the following substances in excess of regulatory limits (for reference of these limits please refer to the HP General Specification of the Environment

(http://www.hp.com/hpinfo/globalcitizenship/environment/supplychain/gen_specifications.html):

- Asbestos
- Certain Azo Colorants
- Certain Brominated Flame Retardants – may not be used as flame retardants in plastics
- Cadmium
- Chlorinated Hydrocarbons
- Chlorinated Paraffins
- Formaldehyde
- Halogenated Diphenyl Methanes
- Lead carbonates and sulfates
- Lead and Lead compounds
- Mercuric Oxide Batteries
- Ozone Depleting Substances
- Polybrominated Biphenyls (PBBs)
- Polybrominated Biphenyl Ethers (PBBEs)
- Polybrominated Biphenyl Oxides (PBBOs)
- Polychlorinated Biphenyl (PCB)
- Polychlorinated Terphenyls (PCT)
- Polyvinyl Chloride (PVC) – except for wires and cables, and certain retail packaging has been voluntarily removed from most applications.
- Radioactive Substances
- Tributyl Tin (TBT), Triphenyl Tin (TPT), Tributyl Tin Oxide (TBTO)
- Nickel finishes that release greater than 0.5 µgrams/cm²/week, measured according to EN 1811:1998, are not used on any product surface designed to be frequently handled or touched by users.

END-OF-LIFE MANAGEMENT AND RECYCLING

Hewlett-Packard offers end-of-life HP product return and recycling programs in many geographic areas. To recycle your product, please go to: <http://www.hp.com/go/reuse-recycle> or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.

The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: <http://www.hp.com/go/recyclers>. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

HEWLETT-PACKARD CORPORATE ENVIRONMENTAL INFORMATION

For more information about HP's commitment to the environment:



Technical Specifications

Global Citizenship Report

<http://www.hp.com/hpinfo/globalcitizenship/gcreport/index.html>

Environment website

<http://www.hp.com/environment>

Eco-label certifications

<http://www.hp.com/hpinfo/globalcitizenship/environment/productdesign/ecolabels.html>

ISO 14001 certificates:

<http://www.hp.com/hpinfo/globalcitizenship/environment/operations/envmanagement.html>

Options and Accessories (sold separately and availability may vary by country)

Type	Description	Part #
Memory	HP 2 GB PC3-12800 (DDR3 1600 MHz) SODIMM	H2P63AA#xxx
	HP 4 GB PC3-12800 (DDR3 1600 MHz) SODIMM	H2P64AA#xxx
	NOTE: Full availability of 4 GB or more of memory requires Windows Vista Business 64-bit or Linux. With Windows 32-bit operating systems, the amount of usable memory is dependent upon your configuration, so that above 3 GB all memory may not be available due to system resource requirements.	
Cases	HP Essential Top Load Case	H2W17AA
	HP Essential Backpack	H1D24AA
	HP Essential Messenger Case	H1D25AA
Docking	HP Dual Hinge Notebook Stand	AW661AA
	HP Display and Notebook Stand	AW662AA
	HP 3005pr USB 3.0 Port Replicator	H1L08AA
	HP 2005pr USB 2.0 Port Replicator	H1L07AA
Input/Output - Mice	HP Wireless Mobile Mouse	H2L63AA
	HP USB Essential Keyboard/Mouse	H2S75AA
Adapters	HP 90W Slim Adapter	BT796AA
	HP 90W Smart AC/Auto/Air Combo Adapter	ED493AA
Storage - External Storage	HP Mobile USB DVDRW	A2U57AA
Batteries	HP PR06 Notebook Battery	QK646AA
Health and Education	HP 20-Notebook Managed Charging Cart	QL489AA
	HP 20-Notebook Charging Cart	QL488AA
	HP 30-Notebook Managed Charging Cart	QL490AA
	HP Pocket Whiteboard	A0X37AA

Options and Accessories (sold separately and availability may vary by country)

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